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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/661,547 | 09/14/2000 | Donald K Harper Jr | BERG-2456 | 9048 |

7590 11/30/2001

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EXAMINER

MCCAMEY, ANN M

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
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2833

DATE MAILED: 11/30/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/661,547

Applicant(s)

HARPER JR, DONALD K

Examiner

Ann M McCamey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

Claim 14 is objected to because of the following informalities: the claim must end with a period. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Desai et al. (US 5,137,456).

Regarding claim 1, Desai et al. disclose (Figure 7) a first connector half 21' having a first array of mating elements 10', a second connector half 105, the second connector half having a second array of mating elements 91; whereby mating the first and second connector electrically connects the component 107 to the substrate 101.

Regarding claim 2, Desai et al. disclose the first connector half being adapted for connection to the substrate via an array of ball type contact portions on the first connector half that form an electrical connection with an array of electrical contacts on the substrate by way of solder reflow.

Regarding claim 3, Desai et al. disclose the second connector half connects to the component via an array of ball type contact portions on the component that form an electrical connection with an array of electrical contacts on the second connector half by way of solder reflow.

Regarding claim 4, Desai et al. disclose an array of electrical contacts on the substrate corresponds electrically to an array of ball type contact portions on the first connector half.

Regarding claim 5, Desai et al. disclose an array of ball type contact regions on the first connector half corresponds electrically to the first array of mating elements.

Regarding claim 6, Desai et al. disclose the first array of mating elements corresponds electrically to the second array of mating elements.

Regarding claim 7, Desai et al. disclose the second array of mating elements corresponds electrically to an array of electrical contacts on the second connector half.

Regarding claim 8, Desai et al. disclose an array of electrical contacts on the second connector half corresponds electrically to an array of ball type contact portions on the component.

Regarding claims 9, 10, 18 and 25 Desai et al. disclose an array of ball type contact portions and an array of ball type contact portions on the component is one of a column grid array, ceramic ball grid array, tab ball grid array and plastic ball grid array.

Regarding claims 11 and 19, Desai et al. disclose (Figure 1) a mating element of the first array of mating elements has dual elongations 13, 15 for receiving a single elongation from a mating element of the second array of mating elements.

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Regarding claim 12, Desai et al. disclose the first array of mating elements and first array of ball type contact portion are on opposing sides of the first connector half.

Regarding claim 13, Desai et al. disclose the second array of mating elements and an array of electrical contacts are on opposing sides of the second connector half.

Regarding claim 14, Desai et al. disclose a connector half 105 having an array of mating elements and an array of electrical contacts 91; and an electrical component 107 having an array of ball type contact portions attached thereto.

Regarding claim 15, Desai et al. disclose the array of mating elements and array of electrical contacts being on opposing sides of the connector half.

Regarding claim 16, Desai et al. disclose the array of mating elements corresponds electrically to the array of contact portions.

Regarding claim 17, Desai et al. disclose the array of contact portions corresponding electrically to the array of ball type contact portion.

Regarding claim 20, Desai et al. disclose a mating element of the array of mating elements having a single elongation 91.

Regarding claims 21-23, Desai et al. disclose the method comprising the steps of mounting a first connector 21' to a the substrate 101; and fusing the fusible elements on the electronic device 107 to contacts on a second connector, said second connector mateable with said first connector; wherein the electronic device is removable attached to the substrate without having to reflow the fusible elements; wherein the fusing step directly fuses the fusible elements to said contacts; and the second connector including

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a housing 106 in which a tail of each of the contacts reside, the fusing step occurring in said recess.

Regarding claim 24, Desai et al. disclose the fusible elements being part of an electronic device 107 so that the electronic device can removably attach to the substrate 101 without having to reflow said fusible elements.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann M McCamey whose telephone number is (703) 305-3422. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (703) 308-2319. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Gary Paumen
Primary Examiner

AMM
November 7, 2001